Determinants of firm competitiveness: case of the Turkish textile and apparel industry

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Abstract

This article explores determinants of competitiveness in the booming Turkish textile and apparel industry. Using focus groups, nationwide survey data and explanatory factor analysis we identify 27 competitiveness items grouped into eight constructs. According to Turkish managers, the competitiveness of textile and apparel firm is heavily determined by the product differentiation, efforts across foreign markets, and availability of government's incentive and support programs. In contrast to existing studies, we find little evidence that firm networking in different forms such as close relationship politicians and state employees, clustering, and participating in the industry associations have a large effect on firm competitiveness.

Keywords : *firm competitiveness, factor analysis, textile industry, apparel industry, Turkey,*

JEL classification: L00, L19, O53

Introduction

Over the past several decades, thriving textile and apparel industry have been an essential part of Turkish success story. With more than 7500 manufactures of textile and apparel products the industry features modern technology, fine quality and moderate labour costs. More importantly, the firms appear to be able to adapt adequately to the rapidly changing domestic environment and increased global competition. Given such performance we explore some of the determinants of competitiveness in the Turkish textile and apparel industry.

The textile and apparel industry is an important part of Turkish economy. In 2009, textile and apparel firms exported products for the total value of USD 22.3 billion accounting for about one fifth of total Turkish shipments abroad (Table 1). Overall, Turkey ranks fifth in the world in terms of apparel exports and is in top ten for most of textile products. Despite the size of the industry most firms are medium scale and clustered in the suburbs of Istanbul, Izmir, Bursa, Denizli, Gaziantep and Kahramanmarash. The industry features a diverse product assortment ranging from textile fibres and yarns to fashion-driven finished apparels.

Table 1. Turkish exports of textile and apparel products

	Type of textile products	2007	2008	2009	2010
Turkeys exports (mln USD)	- Textile fibres	587.6	571.3	423.4	566.6
	- Textile yarn, fabrics, made-up articles, and related products	8950.0	9406.9	7733.3	8973.4
	- Articles of apparel and clothing accessories	13886.3	13589.4	11553.5	12760.3
Turkey's share (%)in the world and rank (in parenthesis)	- Textile fibres	2.45 (9)	2.15 (10)	1.84 (13)	2.16 (10)
	- Textile yarn, fabrics, made-up articles, and related products	4.45 (7)	4.12 (7)	3.87 (8)	4.85 (5)
	- Articles of apparel and clothing accessories	4.79 (5)	4.02 (5)	3.80 (6)	4.85 (4)
Share in Turkey's total exports (%)	- Textile fibres	0.55	0.43	0.41	0.50
	- Textile yarn, fabrics, made-up articles, and related products	8.34	7.13	7.57	7.87
	- Articles of apparel and clothing accessories	12.95	10.29	11.31	11.20

The success of the Turkish textile industry has been conventionally attributed to several factors. Firstly, the country annually produces about 450-500 thousand tons of cotton which is readily available as a primary raw material in the industry. Cotton is complemented with solid domestic production of synthetic fibre. Secondly, geographic proximity to affluent markets in Europe and high-growth countries in Middle East enabled Turkish exporters to reduce the cost of transportation and facilitate the logistics of export-import operations. The customs union with European Union signed in 1996 further contributed to the competitiveness of Turkish exports. The agreement has also triggered improvement in product quality, productivity, environmental awareness, and social responsibility (Culpan &Ekin 2009). Thirdly, the industry enjoys an abundant and well qualified labour force. With annual population growth rate of 1.2 % and significant flows of rural-urban migration the industry has no troubles filling vacant positions in factories. Finally, the success of textile and apparel industries is frequently attributed to overall

liberalization of economy pioneered by Turgut Ozal, one of the Turkish prime ministers, in late 1980s. Those policies spawned unprecedented spike of business activities in selected cities of Central and South-Eastern Anatolia. The success of Denizli, Gaziantep, Kahrmanmarash, and, to a certain extent, of Bursa has been usually placed in such framework.

In view of the importance of the textile and apparel industry in Turkey, and considering a steep growth in exports over the last two decades, one would anticipate a hefty volume of literature on the competitiveness of Turkish firms. Surprisingly, the topic remains largely understudied. Lack of firm-level data is a most likely culprit for such gap. This study aims to contribute the literature by focusing on determinants of competitiveness. More particularly, we concerned with the managerial perception of the competitiveness. To obtain data, we have successfully fielded a survey of textile and apparel firms across Turkey. The methodology of the study relies on most recent development of confirmatory factor analysis.

The paper proceeds as follows. Section 2 provides a review of most recent literature on firm competitiveness both from Turkey and other emerging markets. Section 3 reviews our data collection process, provides a descriptive statistics and describes methods. Section 4 discusses the main estimation results. Section 5 concludes.

1. Literature Review

Competitiveness of the manufacturing sector has been conventionally assessed both at the national and firm level. In more recent literature though, the latter has received more attention since it has been argued that the concept of "competitiveness" is vague at the national context due to the fact that international trade is not a zero-sum game. Krugman (1997) argues that national policies that based on the analysis of international competitiveness of a particular country represent a significant drawback. In fact, they may distort the Focus on domestic economic policy. Other prominent studies that emphasize firm-specific definition of competitiveness include Prahalad and Doz (1987), Bartlett and Ghoshal (1989), and Prahalad and Hamel (1990). These studies suggest that global operations and resource positions, key determinants of the competitiveness, are firm specific. Given such evidence while we acknowledge the important of country specific variable our study explores the issue of competitiveness at the firm's level focusing on Turkish textile and apparel industry.

Porter (1980 and 1990) defines a competitiveness as the ability of a given firm to successfully compete in a given business environment. In subsequent literature, a large cohort of studies focuses on various factors that affect competitiveness. For instance, Schmalensee (1985) uses cross-section data (USA FTC Line-of-Business 1975 data) and reports the strength of the corporate- parent effect is negligible while industry membership explains 20% of variability in firm's total performance. Wernerfelt and Montgomery (1988) industry membership explains 12.3 – 20% depending on controls in the equation. In contrast to Schmalensee, Rumelt (1991) finds that corporate – parent explains 1-2% of the variation in firm performance. Industry membership and business unit dummy effect explain 9 – 16% and 41 – 46% in business unit performance. McGahan and Porter (1997) report that 18.7% variability in firm performance could be explained by industry fixed effects. Next, McGahan (1999) uses cross-sectional 1981-1994 data from the US and reports that 36% of the variance in profitability could be attributed to the firms' characteristics and actions.

A large stream of empirical studies focus on the impact of technological development on firm performance. For example, Bwalya (2006) examine the role of technology spillover on firm

performance; the results show little evidence in support of intra-industry productivity spillovers from FDI. In Turkey, Ozcelik and Taymaz (2003) review the competitiveness of Turkish through innovation angle. The model includes controls for firm size, advertisement incentives, ownership structure and composition of employees and report that compared firms that follow innovation path in terms of technology and other capital formation tend to have better competitiveness.

Other relevant studies on firm competitiveness include Wignaraja (2008). The study finds significant effect of foreign ownership, firm size, human capital, technological capabilities and geographical location on firm's export performance. Next, Javorcik (2004) report that FDI have no direct impact on firm performance while Dao (2008) extends the analysis to cross-country settings by using data from thirty-six developing countries. Dao reports the correlations between corruption and capital formation. Biggs and Shah (2006) examine the role of private support institutions in determining small and medium enterprise growth and performance in Sub-Saharan Africa. The study reports a positive relationship between informal governance institutions and firm competitiveness.

Narayana (2004) utilizes firm level data of 373 India's so called small-scale industries. Focusing on the impact of business environment on firm's performance the study finds that infrastructure facilities including transport, market information, credit, power, water, telecom, technology upgrade, and certification are significant predictors of the small firm performance. Similarly, Hallward-Driemeier, Wallsten and Xu (2006) use 1500 Chinese enterprises data to examine determinates of firm performance and it reveals that firm performance is positively correlated with foreign and domestic private ownership, light regulatory burdens, limited corruption, technological infrastructure and labour market flexibility. Ayyagari, Demirgüç-Kunt and Maksimovic (2010) also use data from China concluding that firms with external financing don't perform better than those firms using commercial banks channels.

Héricourt and Poncet (2009) uses 1300 firm-level data and finds evidence that the development of cross-border relationships with foreign firms helps private domestic firms to bypass both the financial and legal obstacles that they face at home. Using firm level data of ten manufacturing sectors of 11 Sub-Saharan African countries, the study of Goedhuys and Sleuwaegen (2010) finds evidence that firms with product innovation and own transport means are significant for firm's performance. Bollino and Polinori (2008) conclude that financial constraints cannot be considered the main determinant of the FSD evolution in developed economies. Beck, Demirguc-Kunt, and Martinez Peria (2006) uses a firm-level survey database covering 48 countries to investigate how financial and institutional development affects financing of large and small firms, and they find that small firms and firms in countries with poor institutions use less external finance, especially bank finance. Next, Lau, To, Zhang and Chen (2009) conducts a survey designed to use productivity, supply-side and demand-side determinants to measure an enterprise's competitiveness and find that government policies and related industry infrastructures are the most important competitiveness determinants in the textile and apparel industries, followed by domestic demand.

Studies that rely on Turkish evidence include Bilgin, Demir, Lau, To and Zhang (2011). The authors focus on Turkish handmade carpet industry by comparing it with one in Iran, India, China, Afghanistan, Pakistan, and Nepal. As a measure of competitiveness the study uses the determinants of handmade carpet in the USA market are analyzed empirically. The study reports that in recent years the Turkish handmade carpet industry has experienced a period of recession. Bilgin et al. (2011) further observe the declining Relative Competitive Advantage (RCA) and the

Kreinin-Finger Similarity Index (KFS) since 1992. Over the same period, the other competitors of Turkey, notably Iran, have shown small but consistent growth in competitiveness.

Cakmak (2005) examines the competitiveness of Turkey in textiles and clothing industries and their sub-sectors by utilizing RCA and Vollrath's (1991) competitiveness indices. The RCA assessment for Turkey points out on a strong comparative advantage in textiles and clothing both as aggregate commodity group and sub-categories. Vollrath's indices though indicate that Turkey's advantage is less notable. The study also suggests that technological improvements are essential for continued competitiveness of Turkish textile and apparel industries in EU and world markets.

In another study on Turkey, Demir and Ince (2007) estimate the competitiveness of Turkish and German manufacturing sectors relying on the Ricardian model. They find that compared to Germany, Turkey has comparative advantage in textile and apparel products and disadvantage in high-technological products. Along the same lines, Kok and Coban (2005) asses Turkish competitiveness against the EU. The focus of the study is on textile industry. Kok and Coban find that both SITC 2-digit and SITC 3-digit, the competitiveness of the Turkish textile industry and sub-industries is high, although it has been decreasing in recent years. The study concludes that to maintain competitiveness of textile industry, Turkey needs to continue focusing on high value-added goods by investing into R&D to develop a new fashion policy, to create brands with differentiation and to consider market variation. Similar results are reported by Taymaz (2002). The study finds that textile and clothing industry in Turkey features high competitiveness in the EU and the US markets. The paper suggests that elimination of quotas in developed countries would further increase competitiveness through adoption of market diversification strategies and enhancing the technological infrastructure of Turkish firms.

2. Material and methods

The study relies on a primary data collection. A comprehensive list of 2400 textile and apparel firms in Turkey was obtained from the Turkish Clothing Manufacturers Association and the Turkish Regional Textile Export Associations. Accessed information included firm's address, phone number and email addresses. Due to a budget constrain we have reduced the list to 800 firms using a single-stage cluster sampling. These firms received a survey questionnaire via regular mail. We followed-up with a single phone call and eventually succeeded to collect 213 completed questionnaires. This corresponds to 26.6 % response rate which is about 10 percentage points above the conventional response rates for firm-level mail surveys in Turkey. Next, eleven of the completed questionnaires did not contain a sufficient level of information to be included into quantitative analysis of the study limiting us to 202 observations.

As mentioned earlier there is a lack of consensus on how to measure the firm competitiveness as such a concept is multidimensional and dynamic in nature. Therefore, the study granted a detailed consideration to questionnaire design. Some of the insights were obtained from the past studies. For instance, Avella, Fernandez and Vazquez (2001) use firm performance measured by added value per employee as a metrics of firm competitiveness. Along the similar lines, Nachum (1998) and Alvarez, Marin and Fonfria (2009) suggest using market share as a proxy for competitiveness. Bess (2006) offers a wider spectrum by evaluating firm's marketing, production, operation and managerial capabilities. Gadhoum (1999) suggests capturing competitiveness by surveying the cost structure, product differentiation position, economies of scale, employee education and motivation. Henricsson and Ericsson (2005) focus on construction industry and propose using

profitability, productivity, time predictability, cost predictability, clients' satisfaction, wage level, work conditions, labour attractiveness, business ethics and environmental consciousness. Similarly, Stojcic, Hashi and Telhaj (2011) assess labour productivity, productivity of investment, unit labour costs and unit material cost of the product to deduce the competitiveness of the firm. Man, Lau and Chan (2002) offer somewhat different perspective. They avoid discussion on specific variables but rather focus on broader constructs. The paper suggests four main constructs: external environment, internal firm factors, firm performance and influence of the entrepreneur.

Given a diverse range of variables and constructs of the competitiveness rein the literature the study opted for a complimentary opinion. We conducted a series of focus group in a bid to improve our understanding of firm competitiveness in Turkish context and develop questions to be included in the survey. Forty managers were randomly selected and invited to participate in the survey development focus groups. Thirty one of them agreed to be part of the focus group study. We conducted four focus group sessions with 7-9 participants. Two sessions with 14 total numbers of participants were conducted in Gaziantep. Other two sessions with nine and eight managers were held in Denizli and Bursa, respectively.

The focus group discussed the important competitiveness indicators and concluded with a set of competitiveness items and questions to be included in the survey. For rating purpose the survey uses a 5 point Likert type psychometrical scale ranging from disagree (1) to agree (5). The focus of the survey was on outcomes of 2010 although some of the questions were related to the past three years, 2008-2010.

Textile and apparel industry in Turkey is quite clustered. Most of the firms are located in suburbs of Istanbul, Izmir, Bursa, Denizli, Gaziantep and Kahramanmarash. Production of home textile and fabric are the most frequently reported items (Figure 1). Home textile accounts for about 38 % percent of firms while fabric is produced by 35 % of firms in the sample. Others items mentioned by the firms include apparel, underwear and carpet accessories.

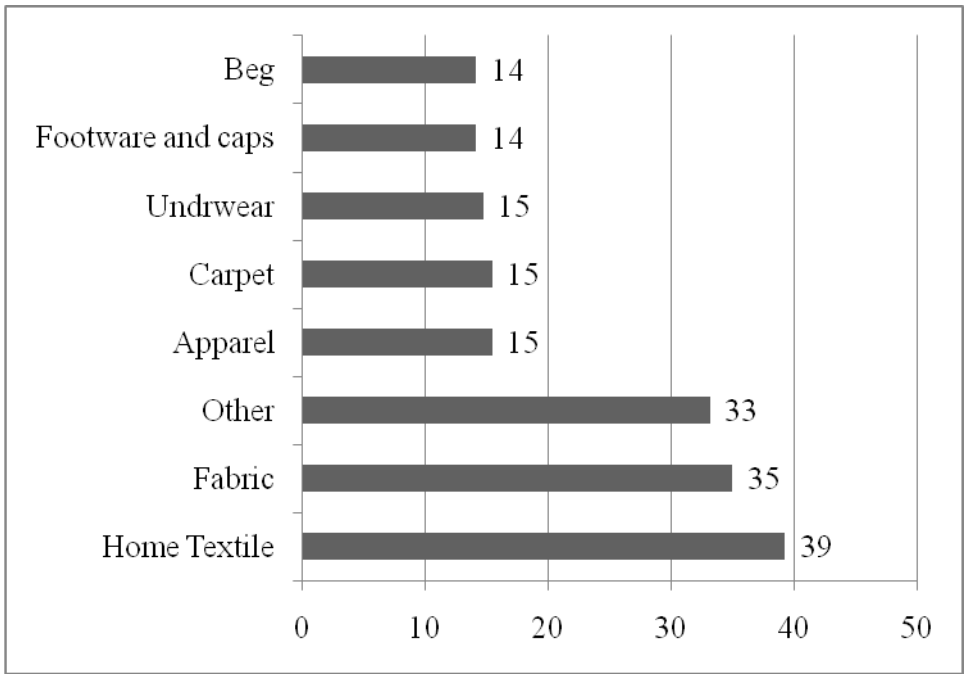

Figure 1. The description of the firm's sub-industry

Given export orientation of the industry we assessed geography of destinations (see Figure 2). The survey also examined the major of the participant firms. We find that in 2010 Germany has been the largest international market followed by UK, Russia, Italy and USA. While Europe remains by far the most important market for many of firms in the sample the share of firms exporting to Iran, Syria, Iraq and other countries in the Middle East has increased substantially over the past three years.

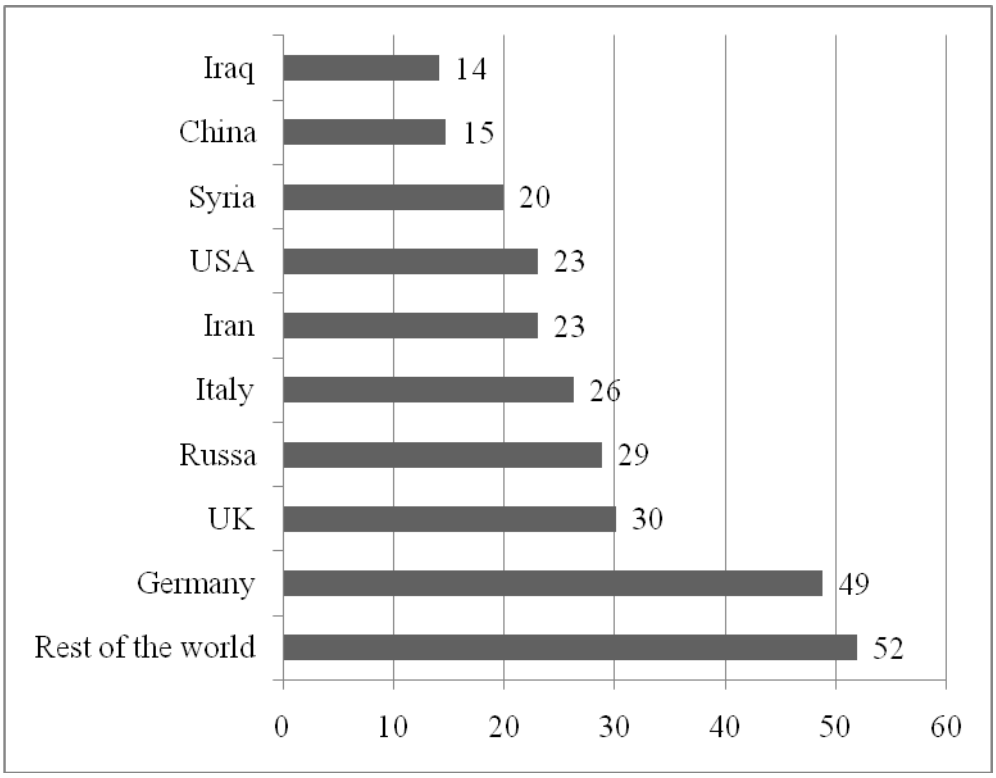

Figure 2. Export destinations

Another key issue that has been frequently discussed by focus group participants was related to product development in particular to a design process. As shown on Figure 3, we find that three out of four are involved in development of in-house product designs. About half of the firms also deliver products with customer tailored design. Less than 20 percent of the firms outsource the design to other firms.

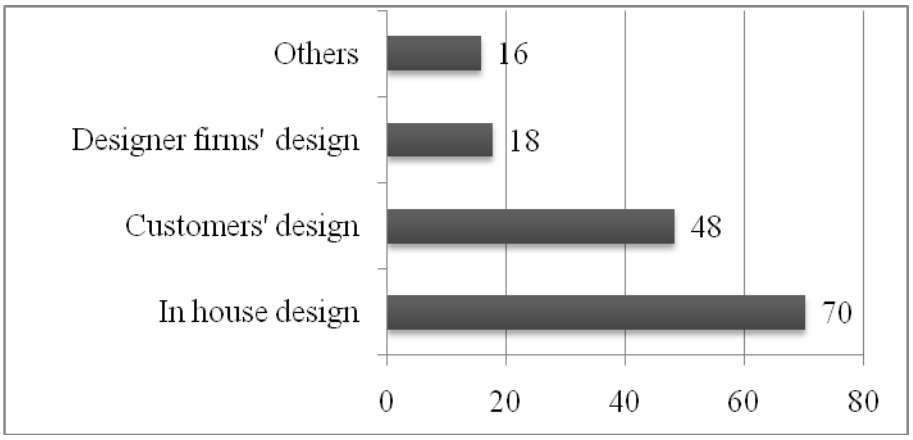

Figure 3. Product design approaches

We use exploratory factor analysis (EFA) to test whether measures of a construct developed by the focus groups are consistent with a survey response received from 202 firms in the sample. To test an internal consistency of the survey we have estimated Cronbach's α coefficient (Cronbach, 1951). Test results indicate on internal consistency of the survey allowing to proceed to EFA and extract key competitiveness constructs for further analysis.

EFA is a data minimizing method resulting in delineation of constructs - of competitiveness in our case. We follow a standard EFA and employ the principal component analysis with Varimax with Kaiser Normalization for extracting the constructs. For our survey data the Varimax rotation converges in 15 iterations. Estimation includes controls for the communalities, the amount of variance the variables share with all the other variables. The EFA generated total variance of 61.81 %, Kaiser-Meyer-Olkin value of 0.678 and approximate Chi-Square of Bartlett's value of 1082,012 with a 325 degree of freedom ($p<0.001$). These results suggest that sampling of the analysis is statistically significant and adequate for further assessment.

We set loading value of 0.45 as minimum benchmark to include in the competitiveness items and 1.00 as passing eigenvalue for competitiveness constructs.

3. Results

The EFA produced eight constructs of the competitiveness by grouping all 27 items listed in Table 2. In other words, all items of competitiveness suggested by the focus groups turned out to be relevant. Based on the content of the items included in the construct we titled the latter as follows: quality management, Focus on foreign markets, licensing and other non-tariff restrictions, reliable access to inputs and infrastructure, national marketing, networking, product differentiation, and government support.

The first construct of competitiveness captures quality management as it includes organizational culture, adhering to the standard of foreign customers, creating a working condition according to the EU standards, intellectual right protection, and education of employees as well as quality management *per se*. Within the construct an organizational culture and quality management scored the highest loading values of 0.753 and 0.711. Such findings are novel in the Turkish context as none of the previous studies encompass these dimensions.

Table 2. Competitiveness Constructs

	Quality Management	Focus on foreign markets	Licensing and other non-tariff	Reliable access to Inputs	Focus on domestic markets	Networking	Product Differentiation	Government Support
Organization culture	.753							
Quality management	.711							
Intellectual right protection	.589							
Education and training of employees	.587							
Producing according to the standard of foreign customers		.435						
Creating a working condition according to the EU standards		.420						
Marketing abroad		.811						
Lack of volatility in foreign demand		.756						
Access to the sea port		.625						
Export quota			.739					
Export licensing requirement			.721					
Bureaucracy and red tape issues			.694					
Environmental restrictions			.414					
Reliable access to water				.881				
Reliable natural gas or coal				.835				
Reliable supply of other utilities				.441				
Marketing at home					.809			
Lack of volatility in domestic demand					.724			
Sales and distribution network					.507			
Vertical integration					.494			
To have close connection with politician and state managers						.692		
Social responsibility-charity						.656		
Industry cooperation and network						.628		
Product differentiation							.779	
Research and development							.403	
Preferential government policies								.793
Variance Explained	*17.93*	*9.30*	*9.86*	*6.38*	*6.11*	*4.96*	*4.34*	*4.13*
Percent of total variance explained	*17.93*	*27.23*	*35.90*	*42.28*	*48.39*	*53.37*	*57.69*	*61.81*
Initial Eigenvalues	*4.66*	*2.42*	*2.25*	*1.66*	*1.59*	*1.29*	*1.13*	*1.07*
Cronbach's α	*67*	*71*	*66*	*70*	*64*	*61*	*38*	*NA*

The second construct generated by the EFA grasp the focus on foreign markets. The construct features marketing efforts by the firm abroad, the stability of export markets, as well as access to sea ports. Given the fact that sea port serve as main gateway for shipments abroad placement of this item with a loading value of 0.625 in the this construct by the EFA is in a sense justified. The third construct formed by the factor analysis incorporates licensing and other non-tariff restrictions. Export quotas and licensing requirement obtained relatively higher loading values of 0.739 and 0.721 respectively outpacing environmental and red tape limitations.

The next construct defines an access to inputs such as water, gas, coal and others utilities. Access to water attains a high loading value of 0.881. In fact, this item seems to be most important across all competitiveness items. This finding is in line with our expectations as most of the focus group participants have emphasized water-intensity of textile industry. The fifth construct includes marketing at home, stability of domestic demand and sales and distribution network. Overall the construct measures firm's efforts in the domestic market. As in case of the foreign markets within this construct marketing activity yielded the highest loading factor of 0.809. The six construct aggregates the items related to network capabilities as well as supply chain. It emphasizes the strength of both vertical and horizontal integration (via so called "industry cooperation and network"). Network relationship with politicians received the highest loading value within the construct – 0.692.

Product development and differentiation construct includes two items: product differentiation with a loading factor of 0.779 and R&D that has barely passed the benchmark level for loading value. The last construct consists of a single item, namely preferential government policies. The EFA analysis has distinguished this competitiveness item from other items with relatively high value of 0.793.

Table 3 lists the mean of each item and generated constructs used in the factor analysis. The construct of product differentiation has the highest average score of 4.51 (Table 3) due to higher scores obtained by both product differentiation and R&D competitiveness items. The construct of the focus on foreign markets closely follows with the average score of 4.27 largely due to importance if a foreign marketing item that has one of the highest scores of 4.54.

Preferential government policies are also highly ranked by the managers with the score of 4.22. The construct of quality management is next in the ranks (4.18) despite the fact that it includes the highest rated competitiveness item of production according to the standards of foreign customers. The focus on the domestic market and access to basic resources such water, gas and coal remain important with relatively high average score of 3.99 and 3.91, respectively. Licensing and other non-tariff restrictions have a moderate effect. Certain items of networking construct turned out to be not very important. For example, maintaining the relationship with state politican seems to be very weak enhancer of the competitiveness of the firm. Cooperation with other firms in the industry also scores relatively low, 3.56.

Table 3. Means of competitiveness constructs and items

	Mean	Std. Deviation
Product differentiation	**4.51**	**0.54**
Product differentiation	4.52	0.76
Innovation, research and development	4.49	0.62
Focus on foreign markets	**4.27**	**0.6**
Marketing abroad	4.54	0.78
Lack of volatility in foreign demand	4.27	0.86
Access to the sea port	3.97	1.04
Government support	**4.22**	**0.94**
Preferential government policies	4.22	0.94
Quality management	**4.18**	**0.58**
Producing according to the standard of foreign customers	4.63	0.6
Education and training of employees	4.38	0.69
Quality management	4.37	0.68
Organization culture	4.18	0.76
Creating a working condition according to the EU standards	3.82	1.03
Intellectual right protection	3.74	1.08
Focus on domestic market	**3.99**	**0.68**
Sales and distribution network	4.46	0.75
Marketing at home	3.89	1.1
Lack of volatility in domestic demand	3.71	1.06
Reliable access to inputs	**3.91**	**0.83**
Reliable supply of other utilities	4.4	0.69
Reliable access to natural gas or coal	3.67	1.24
Reliable access to water	3.64	1.15
Licensing and other non-tariff restrictions	**3.77**	**0.78**
Export licensing requirement	3.91	1.02
Bureaucracy and red tape issues	3.78	1.15
Environmental restrictions	3.7	1.07
Export quota	3.69	1.19
Networking	**3.43**	**0.68**
Industry cooperation and clustering	3.56	1.04
Social responsibility-charity	2.83	1.16
Networking with politician and state employees	2.4	1.15

In order to determine whether the differences between the mean values of the competitiveness constructs listed in Table 3 are statistically significant. Paired sample t-tests were calculated, which can be seen in Table 4. Paired Samples t Test computes the difference between the two variables, and observes if the difference is significantly different from zero. We find that with the

exception of very pairs the difference in average scores of constructs is significantly different from zero which confirms that according to managers the constructs uniquely define certain characteristics of the competitiveness.

Table 4. Paired Samples Test

	Paired Differences		
	Mean	t	
Quality management - Focus on foreign markets	-0.09	-1.63	
Quality management - Licensing and other non-tariff restrictions	0.40	5.50	**
Quality management - Reliable access to inputs	0.26	3.65	**
Quality management - Focus on domestic market	0.19	3.28	**
Quality management - Networking	0.76	13.02	**
Quality management - Product differentiation	-0.33	-6.03	**
Quality management - Government support	-0.05	-0.59	
Focus on foreign markets - Licensing and other non-tariff restrictions	0.47	7.29	**
Focus on foreign markets - Reliable access to inputs	0.33	4.54	**
Focus on foreign markets - Focus on domestic market	0.28	4.18	**
Focus on foreign markets - Networking	0.85	12.49	**
Focus on foreign markets - Product differentiation	-0.25	-4.58	**
Focus on foreign markets - Government support	0.02	0.26	
Licensing and other non-tariff restrictions - Reliable access to inputs	-0.14	-1.66	
Licensing and other non-tariff restrictions - Focus on domestic market	-0.21	-2.82	**
Licensing and other non-tariff restrictions - Networking	0.35	4.80	**
Licensing and other non-tariff restrictions - Product differentiation	-0.73	-10.40	**
Licensing and other non-tariff restrictions - Government support	-0.45	-5.04	**
Reliable Access to Inputs - Focus on domestic market	-0.08	-0.97	
Reliable Access to Inputs - Networking	0.48	6.47	**
Reliable Access to Inputs - Product differentiation	-0.59	-7.93	**
Reliable Access to Inputs - Government support	-0.31	-3.14	**
National Marketing - Networking	0.56	10.00	**
National Marketing - Product differentiation	-0.52	-8.71	**
National Marketing - Government support	-0.24	-2.91	**
Networking - Product differentiation	-1.09	-16.25	**
Networking - Government support	-0.80	-10.51	**
Product differentiation - Government support	0.28	3.29	**

** $p<0.01$; *$p<0.05$

Discussion and Conclusions

Given a stellar performance of Turkish textile in recent years the paper explored some of the determinants of competitiveness in the Turkish textile and apparel industry. We use a series of focus group sessions and findings from the past literature to form a questionnaire addressed to managers of textile and apparel firms across Turkey. The questions included in the survey reflect 27 competitiveness items identified at survey design stage.

Based on 202 responses the study applied explanatory factor analysis (EFA) to identify constructs of competitiveness by grouping competitiveness items. The EFA analysis grouped these items into eight constructs. Based on the definition of items we identify these constructs as quality management, focus on foreign markets, licensing and other non-tariff restrictions, reliable access to inputs and infrastructure, focus on domestic markets, networking, product differentiation, and government support.

We find that according to Turkish managers the competitiveness of textile and apparel firm is heavily determined by the product differentiation as well as innovation, research and development strategies. These findings are support the rationale and efforts of numerous national initiatives in Turkey. One of such project is titled as Competitive Advantage of Turkey. Its head, Wienberg has recently mentioned that firms from emerging countries frequently fall in trap of pricing the product at a lower price and abiding that low price with paying lower salaries to its employees instead of focusing on product differentiation. The firms which do differentiate their products become much more competitive (Tekinay, 2003). These findings also support the memorandum of the IV. Machine, Design and Production Technologies Assembly (2007) which indicated that firms in textile and apparel industry should rely on product differentiation are sustaining their competitiveness in the international market than the others which other strategy. These findings are also line with previous academic literature (most notably, Hall 1980; McNamee & McHugh 1989; Kok & Coban 2005; Taymaz 2002). Product differentiation and R&D allow the industry to stick to high value-added goods such as new fashion products with brand recognition, designer items, and other high end products.

Our study also finds that firm competitiveness is largely determined be firm's efforts across foreign markets. Such findings are in line with Arze and Svensson's (1997) study which was conducted in Chile and showed that the firms, having international marketing activities, are more competitive then the firms lacking such activities. Taymaz (2002) and Kok and Coban, (2005) raise this issue as well.

Government support ranks third in importance. Similar findings are reported in Korea (Amsden 1989; Amsden & Wan-wen 2003) and China (Altenburg, Schmitz & Stamm 2008; Noumoff 2003). This seems to be a general phenomenon in emerging economies. In Turkish context, the results also support Karabag and Berggren (2011) which report the Turkish state had an important role for the firms R&D initiatives and success.

Finally this study shows that networking in different forms such as relationship politicians and state employees, clustering, participating in the industry cooperation is scored the lowest average. It seems that in Turkish textile and apparel industry that is heavily oriented to exports networking measured in this study as industry cooperation and clustering, networking with politician and state employees as well as social responsibility-charity play little role in improving competitiveness. Such results are in contrast with most of the past literature. We contradict to

Harrigan (1987 and 1988), Li, Poppo and Zhou (2008), Alvarez, Marin and Fonfria (2009) and Jean, Tan, and Sinkovics (2011) as all of these articles report that networking significantly

improves firm competitiveness in emerging countries. In a sense, our findings on Turkish textile and apparel firms may relate to the idea that managerial network ties are important for the domestic firms but they become less important when the firm stretches its activities abroad where competition is based on quality and price and networks are non-existent to begin with. Future research on the topic may reveal more in-depth insights.

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